

ISDS Repair Guidance in Critical Erosion Areas

January 31, 2006

Recent storms have caused severe coastal erosion along the south shore in Matunuck and Green Hill areas that has undermined structures and exposed components of septic systems. Coastal erosion is a continual process that threatens many structures along RI's coastline. ISDS repair in these highly vulnerable areas designated by CRMC as Critical Erosion Areas requires a permit from the R.I. Department of Environmental Management and an assent from the RI Coastal Resources Management Council.

The RI DEM "Rules and Regulations Establishing Minimum Standards Relating to Location, Design, Construction, and Maintenance of Individual Sewage Disposal Systems" (ISDS Rules) provide the Department with discretion in approving applications for repair (SD 2.01(d)(5)) on lots with limiting conditions. As such, each application is reviewed on a case-by-case basis with the objective that the design meets the requirements of the regulations to the greatest extent possible and environmental and public health risks are minimized. Because of the unique circumstances caused by recent coastal erosion, DEM in conjunction with CRMC has developed the guidance below to address ISDS repairs in the CRMC designated Critical Erosion Areas.

This Repair Guidance consists of a three-tiered structure based on distance from the actively eroding edge of the coastal feature, typically the dune crest or bluff scarp. This policy applies to residential and commercial facilities located along shorelines subject to coastal erosion. It is assumed that insufficient land area is available for ISDS repair components to comply with the system location requirements of SD 3.05 of the ISDS Rules.

Distance from the Actively Eroding Edge of the Coastal Feature to Any ISDS Component	ISDS Requirement
Less than or equal to 50 feet	Zero Discharge System required.
Between 50 and 100 feet	Zero Discharge System or an approved innovative/alternative (IA) system.
Beyond 100 feet	Any system that fully complies with all other applicable (DEM, CRMC, zoning, etc.) regulations.

Please note that no expansion of use or increase in wastewater flow is allowed under a repair application.

Zero Discharge System:

Zero Discharge Systems include, but are not limited to:

- Holding tanks for all wastewater; or
- Compost toilet or incinerator toilet for blackwater and a holding tank for graywater.

IA Technology:

A listing of Department approved IA technology may be found at:

<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/ialist.pdf>

Holding Tank Requirements:

- Minimum capacity: five (5) times the daily design flow; or if graywater only, sixty percent (60%) of five (5) times the daily design flow.
- Tank shall be water-tight. As a condition of each repair permit, tanks shall be tested in place for leakage using either of the procedures below:
 - Vacuum Test – Seal the empty tank and apply a vacuum to two (2) inches (50 mm) of mercury. The tank is approved if ninety percent (90%) of the vacuum is held for two (2) minutes; or
 - Water-Pressure Test – Seal the tank, fill with water, and let stand for twenty-four (24) hours. Refill the tank. The tank is approved if the water level is held for one (1) hour.
- Tank shall be equipped with an audio-visual alarm set to activate when the tank reaches sixty percent (60%) of its capacity.
- Tank shall be vented such that the vent is at an elevation higher than the elevation of the highest fixture served.
- Tank shall be installed on a level, stable base that will not settle. Backfill shall be placed around the tank in such a manner as to avoid damage to it. Provisions shall be made to anchor the tank to prevent floatation.
- Tank shall have a minimum cover of one (1) foot and a ten (10) foot invert perimeter.
- Prior to approval of the installation of a holding tank the property owner shall provide to the Department a copy of a contract with a licensed septic tank pumper for the periodic pumping of the tank.

Placement of Fill or Structures:

Placement of fill or structures within velocity/flood zones should be avoided. Exterior composting chambers and holding tanks should be located below existing grade where possible and suitably anchored to resist buoyant forces.

Priority with respect to other standards:

With the exception of setback distances to drinking water supplies, the Department will generally give priority to maximizing the setback of any tank, treatment structure, or leachfield to the eroding edge of the coastal feature when evaluating competing

constraints. For example, the Department will generally favor maximizing the setback distance to the eroding edge of the coastal feature and allow encroachment into the ten (10) foot setback from the property line or street line. Likewise, the Department may allow closer setbacks to building foundations. In particular, placement of ISDS components in open areas below raised dwellings and within fifteen (15) feet of pilings will ordinarily be allowed. Any proposed reduction in separation distances to water lines or water services must be approved by the local water utility and meet all construction requirements including sleeving or relocation.

Please note that local building or zoning codes may apply and affect the location of ISDS components. Local requirements should be taken into consideration during design.

Easements:

Applicants may propose obtaining rights or easements to nearby properties for ISDS components, including leachfields, where such option will achieve greater compliance with this guidance or standards in the ISDS rules. Fully executed agreements, easements and local approvals for street crossings, in proper legal form, must be submitted with the application.

Administration:

The respective repair applications to place system components within 100 feet of the actively eroding edge of the coastal feature in Critical Erosion Areas should be submitted to CRMC and DEM concurrently. DEM and CRMC will undertake joint reviews. If errors in plans concerning the location of the actively eroding edge of the coastal feature are uncovered during preliminary review, the application will be found deficient and returned to the applicant. Designers are urged to contact DEM or CRMC prior to submittal for further guidance on special problems that may arise during design.